



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5A4
 UNIQUE ID NUMBER: 4CM035
 COMBUSTOR:
 ENGINE TYPE: TF

BYPASS RATIO: 6.0
 PRESSURE RATIO (π_{00}): 23.8
 RATED THRUST (F_{00}) (kN): 97.9

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	5.1	41.9	45.6	17.9
AS % OF ORIGINAL LIMIT	25.9	35.5	52.0	75.1
AS % OF CAEP/2 LIMIT (NO _x)			65.0	
AS % OF CAEP/4 LIMIT (NO _x)			79.8	
AS % OF CAEP/6 LIMIT (NO _x)			90.7	
AS % OF CAEP/8 LIMIT (NO _x)			110.2	

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
 - DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	0.897	0.23	1.10	22.64	13.9
CLIMB OUT	85	2.2	0.740	0.23	1.10	19.11	11.6
APPROACH	30	4.0	0.261	0.50	3.10	8.51	4.2
IDLE	7	26.0	0.095	1.75	20.30	4.04	2.4
LTO TOTAL FUEL (kg) or EMISSIONS (g)			346	322	3352	3851	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				3.3	34.1	39.3	13.9
SIGMA (D _p /F ₀₀ in g/kN, or SN)							
RANGE (D _p /F ₀₀ in g/kN, or SN)							

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	94.7-95.6
TEMPERATURE (K)	280-291
ABS HUMIDITY (kg/kg)	0.0026-0.0034

FUEL

SPEC	Jet A
H/C	1.95
AROM (%)	18

MANUFACTURER: CFM International
 TEST ORGANIZATION: CFM56 Evaluation Engineering
 TEST LOCATION: Peebles Site IIIC
 TEST DATES: 19/11/1986-20/11/1986

REMARKS

1. Ref GE Reports R89AEB316 and R87AEB386
2. Engine S/N 730002/2

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)